

What is claimed is:

1 1. A method of fabricating a semiconductor device having a recess
2 region in an insulation layer on a silicon substrate, the method comprising
3 the steps of:

4 depositing a barrier metal on the whole surface of the insulation layer
5 including the substrate surface in the recess region;

6 depositing selectively an anti-nucleation layer on the barrier metal
7 except in the recess region;

8 depositing a CVD-Al layer on the barrier metal in the recess region;

9 depositing a metal or a metal alloy for inhibiting aluminum migration
10 on the barrier metal except in the recess region; and

11 depositing a PVD-Al layer and reflowing the PVD-Al layer.

1 2. The fabrication method of claim 1, wherein the metal or the metal
2 alloy inhibiting aluminum migration is one of Ti, TiN, Ti/TiN, Ta, TaN and
3 Ta/TaN.

1 3. The fabrication method of claim 1, wherein a deposition thickness
2 of the metal or the metal alloy inhibiting aluminum migration is less than
3 100 Å.